

# Aquilegia

Newsletter of the Colorado Native Plant Society



“ . . . dedicated to the appreciation and conservation of the Colorado native flora ”

Volume 30 Number 4

WORKSHOP EDITION

September - October 2006

## 2006 - 2007 COLORADO NATIVE PLANT SOCIETY WORKSHOP PROGRAM

Workshops will be held each month from September through May along the Front Range. Most workshops will be held in Boulder but we are actively seeking members from the West Slope, Fort Collins, Denver and Colorado Springs who would be willing to coordinate one or two workshops a year in those areas. Contact Mary Ellen Ford if you are interested (Fordmaryel@aol.com or 303-449-7334).

### Registration Information

Registration is mail-in only and requires payment at the time of registration. The fee for attending a workshop is \$20 per session for members only. Non-members must join CONPS to register for a workshop. The registration fee is non-refundable.

Participation is often limited and registration is processed in the order received. If the workshop has already been filled, you will be notified, your check will not be deposited, and you will be added to the waiting list if that is what you desire.

To register, please mail your check, payable to CONPS for \$20 per workshop, along with the following information: title and date of the workshop(s), your name, address, telephone number and email address. Registration can only be processed with all of this information. Please use the registration form provided. Other than the September Colorado Wildscapes workshop, registration applications will not be accepted until September 17, 2006.

Mail registration form to  
Mary Ellen Ford  
2133 13th Street  
Boulder, CO 80302

For those who need to cancel at the last minute, we appreciate your \$20 contribution to CONPS and ask that you call or email Mary Ellen (303-449-7334 or Fordmaryel@aol.com) so she has the opportunity to fill your spot.

### Microscope Fund

New microscopes for CONPS workshops are desperately needed! Learning about plants is much more enjoyable when you can see each trichome, pollinium or involucre. The increase in registration fee (from \$12 to \$20) goes directly to the Microscope Fund. You can also contribute to the Microscope Fund by mailing contributions (payable to CONPS) to Mary Ellen Ford.

### Workshops

**COLORADO WILDSCAPES:  
BRINGING CONSERVATION HOME**  
**Leader: Connie Holsinger of Audubon Colorado**  
**Location: Foothills Nature Center, Boulder**  
**Only Session: September 23, 2006**  
**Time: 9 am to noon**

Using the beautiful and practical guidebook, *Colorado Wildscapes*, this workshop will provide participants with the how-to's of making your backyard wildlife friendly, water efficient and beautiful using native plant species. Specifically, attendees will learn how to plant for year-round interest and wildlife habitat diversity, conserve water supplies by choosing waterwise plant selections, create a healthy yard - a refuge for people as well as wildlife - by reducing pesticide usage, thus protecting water supplies, select native plant species and remove invasive ones. This

*“Workshops” continues on page 2*

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**"Workshops" continued from page 1**

workshop will only be offered on Saturday morning and should allow participants enough time before winter to initiate fall planting with the Wildscapes philosophy in mind.

**BEGINNING PLANT TAXONOMY: THE BIG PICTURE**

**Leader:** Mary Ellen Ford

**Location:** Foothills Nature Center, Boulder

**First Session:** Saturday, October 21, 2006

**Second Session:** Sunday, October 22, 2006

**Time:** 9 am to 2 pm

What is a plant? What distinguishes plants from other organisms and how do we characterize those relationships? Within the "Plant Kingdom," what groups do we recognize? This workshop will provide a very basic overview of what characterizes the following Land Plants: Angiosperms (flowering plants – monocots and eudicots); Gymnosperms (conifers, cycads and ginkgos); Pteridophytes (ferns and fern allies); and Bryophytes (mosses, hornworts and liverworts). Live plants and herbarium specimens will be available for participants to observe distinguishing characters of representatives of each of these major groups.

**POPULUS L. (SALICACEAE)**

**Leader:** Mary Ellen Ford

**Location:** Foothills Nature Center, Boulder

**First Session:** Saturday, November 18, 2006

**Second Session:** Sunday, November 19, 2006

**Time:** 9 am to 2 pm

Cottonwoods, aspens and balsam poplars comprise the genus *Populus*. Distributed throughout the Northern Hemisphere, participants will learn how to identify the major sections, species and subspecies, with particular emphasis on Colorado representatives. Species of *Populus* readily hybridize and backcross, particularly along the Front Range, providing some challenging identification puzzles. Aspects of *Populus* which will be presented will include morphology, molecular signals, ecology and biogeography.

**GYMNOSPERMS**

**Leader:** Leo Bruederle

**Location:** Downtown Denver Campus of the University of Colorado at Denver and Health Sciences Center

**North Classroom Building 3419**

**Only Session:** Saturday, December 9, 2006

**Time:** 9 am to 3 pm

Gymnosperms, specifically conifers, dominate the landscape of much of Colorado, and, in fact, they form the basis by which we classify many of Colorado's communities and ecosystems. This workshop will introduce participants to the North American families of gymnosperms, as well as those families and genera that are important to the Colorado flora. Additionally, participants will obtain experience keying our native species, with an eye toward ready identification in the field.

**AQUILEGIA DEADLINE - OCTOBER 15**

Submit contributions for Vol. 30, No. 5 by October 15, 2006, via e-mail as an MS Word or rtf document. See page 7 for additional information.

**INTRODUCTION TO GRASS TRIBES  
WITH EMPHASIS ON THE WHEAT/BARLEY TRIBE**

**Leader:** David Buckner

**Location:** Foothills Nature Center, Boulder

**First Session:** Saturday, January 13, 2007

**Second Session:** Sunday, January 14, 2007

**Time:** 9 am to 3 pm

Participants will be led through the basics of grass floral structure and nomenclature (along with side trips to ecology, evolution and domestication). This iteration of the workshop will include special emphasis on the wheat/barley tribe and a more detailed treatment of the prominent native species of this group - for example wheatgrasses and wildryes (but also including squirrel tails, barleys, etc.). Class members will have available mounted specimens for review as well as collected materials for dissection.

**POTENTILLAS OF COLORADO**

**Leader:** Rich Scully

**Location:** Foothills Nature Center, Boulder

**First Session:** Saturday, February 10, 2007

**Second Session:** Sunday, February 11, 2007

**Time:** 9 am to 3 pm

*Potentilla* species are notoriously difficult to separate, partly because hybridization sometimes results in a continuum of variation. Photographs will show the identifying characters between the Colorado species of *Potentilla*, as well as the closely related genera *Drymocallis* and *Comarum*. An expanded key will be provided and pressed specimens will be available on which to practice identification skills. We will discuss how to distinguish commonly confused species or otherwise deal with uncertainty in identification.

**EUPHORBACEAE IN COLORADO**

**Leaders:** Dina Clark, Carolyn Crawford, Bill Jennings

**Location:** Foothills Nature Center, Boulder

**First Session:** Saturday, March 17, 2007

**Second Session:** Sunday, March 18, 2007

**Time:** 9 am to 3 pm

This workshop covers the 18 species in the Euphorbiaceae native to Colorado. There are ten species present and established (such as leafy spurge) or reported occasionally as weeds, and three species reported for Colorado that are not present. The nomenclature in the Euphorbiaceae is controversial, as Weber & Wittmann have broken up genus *Euphorbia* into numerous smaller genera in their various works. Except for *Chamaesyce*, these genera are not generally recognized elsewhere. In addition, recent DNA research has indicated that *Reverchonia* should not be included in the Euphorbiaceae. At this workshop, you will learn how to distinguish the genera, where they are located in Colorado, and when to look for them. A handout has been prepared discussing all species. Our own keys and specimens will be available for study. The weed species of the Euphorbiaceae are important noxious weeds and all Colorado botanists should learn how to recognize them.

**Denver Botanic Gardens Discount Membership**  
Contact Denver Chapter President Naomi Nigro for details.

## Population Genetics and Hybridization in the Rare Colorado Endemic *Physaria bellii* Mulligan

Linda Courter Kothera

*Physaria bellii* (Bell's Twinpod) is an herbaceous, diploid ( $2N=8$ ), perennial member of the Brassicaceae (Mustard Family), which is endemic to north central Colorado. It is a habitat specialist, restricted to sloping shale and sandstone washes of the Niobrara, Pierre, Lykins and Fountain/Ingeside formations between elevations of 1580 and 1760 meters along the Front Range (Spackman et al. 1997, Doyle et al. 2004). These geological formations have a patchy distribution and, as a result, *P. bellii* does as well. According to the system used by the Colorado Natural Heritage Program, Bell's Twinpod is ranked G2/S2, meaning it is imperiled because there is a small number of populations, and because this species depends on a habitat which is itself potentially threatened (Spackman et al. 1997, Doyle et al. 2004). *Physaria bellii* forms rosettes of leaves and bears several to many inflorescences which flower from April through May, and set seed around the middle of July. It is self-incompatible (Mulligan 1966). The fruit is a small (4-6 mm) inflated silique consisting of two valves.

I studied *P. bellii* for my doctoral research at Colorado State University. I am interested in rare plants, and *P. bellii* appealed to me because it is locally abundant, but at the same time, vulnerable because its habitat is desired for human activities. The patchy distribution of *P. bellii* indicates there may be genetic differentiation among the populations. One part of my research looked at estimating the amount of genetic diversity and genetic differentiation present in *P. bellii* populations. In addition, anecdotal evidence suggested that *P. bellii* was hybridizing at the southern end of its range with the more common (but still endemic to central Colorado) *P. vitulifera*. As a result, the other part of my research involved establishing whether hybridization had occurred and also characterization of any hybrids.

I collected leaf tissue from ten *P. bellii* populations for DNA extraction and for leaf measurements. The DNA was used to generate genotypes of 300 *P. bellii* individ-

uals, which allowed me to estimate the population genetic diversity and differentiation. Overall, the data were consistent with a species whose populations are distributed linearly across a patchy habitat type. There is a moderate amount of genetic diversity in *P. bellii* populations, and most of that diversity is within the populations, as opposed to being among them. There does not appear to be appreciable levels of inbreeding in *P. bellii* populations, a condition that can reduce levels of genetic diversity in a species. There is also a significant correlation between the genetic distance between adjacent populations and the geographic distance between those populations, indicating that populations exchange genes most frequently with populations that are close by. In addition, there is a high degree of genetic structure in *P. bellii* populations overall. In other words, each population is fairly different from the others. Even so, this work generated evidence that gene flow is occurring among the *P. bellii* populations around the city of Boulder, such that the ten sampled populations form eight genetic clusters.

I also collected leaves from 11 *P. vitulifera* Rydberg (sometimes called Rydberg's Twinpod) populations as well as from two putative hybrid populations for DNA extraction and leaf measurements. Both data sets, genetic as well as morphological, discerned among the parental species and the putative hybrids such that members of each group clustered together. The genetic data were much clearer in this regard, probably due to the nature of the data (either the marker was there or it was not). I also found several species-diagnostic markers, which were found in over 90% of one parental species or the other. I constructed a hybrid index from these data (see Figure 1), that shows *P. bellii* individuals having scores closer to zero and *P. vitulifera* individuals scoring closer to six. There are two types of hybrids on the figure. The putative (naturally occurring) hybrids have scores that are closer to *P. vitulifera* and not strictly intermediate. I also produced several first generation hybrids (F1s) between the parental species

through controlled pollinations, and these individuals have more intermediate scores than the natural hybrids. These results suggest that the putative hybrids are different in both regards, compared to the parental species, and genetically are more like *P. vitulifera*.

In addition, I measured leaves from the two species and the hybrids. The most obvious difference between the leaves of *P. bellii* and *P. vitulifera* is the presence or absence of sinuses; *P. bellii* lacks them and *P. vitulifera* is supposed to have them. I measured the depth of the sinuses and the length and width of leaves; and counted the number of teeth on the margin of the leaves, and whether it had a tooth at the apex of the leaf (see Figure 2). In the sample of leaves I examined, I found that *P. bellii* leaves never had sinuses, but only 69% ( $N=100$ ) of *P. vitulifera* leaves had ones deep enough to measure. Interestingly, 51% ( $N=58$ ) of the hybrids had sinuses, and one might think, then, that the sinuses themselves would be intermediate in depth. However, there was virtually no statistical difference between the sinuses of *P. vitulifera* and the putative hybrids; when a hybrid has sinuses, it looks like *P. vitulifera*. With regard to the other characters, the two parental species differed for most of the characters, while the hybrids differed from each parental species on only one character, suggesting that overall, hybrids do have an intermediate leaf morphology between *P. bellii* and *P. vitulifera*. The results from the genetic and morphological analyses support the idea that populations in Jefferson County, which previously had been classified as *P. bellii*, should instead be classified as hybrids.

As part of the hybrid study, I also wanted to assess the degree to which *P. bellii* is threatened by hybridization with *P. vitulifera*. Some *P. vitulifera* populations are diploid (eight chromosomes) like *P. bellii*, and others are tetraploid (16 chromosomes). When two species have different numbers of chromosomes, it can act as a barrier to hybridization. If they have the

same number, then it is comparatively easier to form hybrids. I found that most *P. vitulifera* populations are tetraploid, as are the hybrids, but the population closest to the hybrid populations was diploid. These results suggest a possible scenario that could explain the ploidy level and location of the present-day hybrids. Hybridization originally occurred between diploid individuals of both parent species, which were in closer proximity than they are today. This was followed by a chromosome doubling event that resulted in present-day hybrids having a tetraploid number of chromosomes. I also found that inter-species crosses yielded less seed than intra-species crosses, which suggests that there are reproductive barriers in place between the parental species.

My study generated evidence that the purported hybrid populations of *P. bellii* and *P. vitulifera* in Jefferson County are indeed hybrids. It is good news that *P. bellii* does not appear to be threatened by hybridization with *P. vitulifera* at this time. However, the results from this study indicate *P. bellii* is confined to just two counties in Colorado - Boulder and Larimer. Furthermore, the results from the population genetics part of my research indicate that each population makes a unique contribution to the genetic diversity of the species as a whole. The loss of even a few populations could alter the current pattern of gene flow, which could reduce levels of genetic diversity. *Physaria bellii* faces the very real threat of loss of habitat from residential development and limestone mining. Conservation efforts should thus involve monitoring populations to ensure that levels of genetic diversity remain stable, as well as ensuring a significant proportion of populations (there are less than 30) are not lost to human activities. As *P. bellii* lacks formal protection, the impetus for this work will likely fall to the cities of Fort Collins and Boulder, as well as Larimer and Boulder county open space programs.

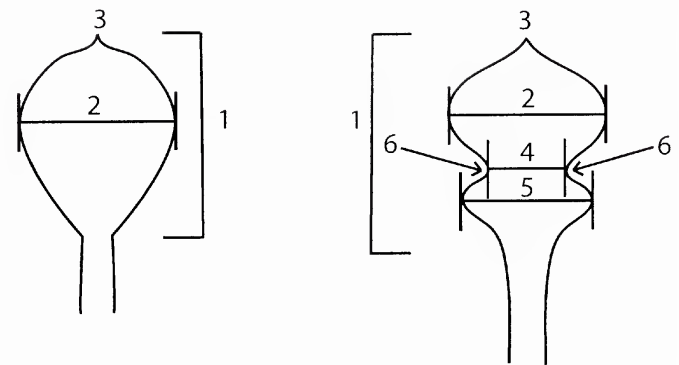


Figure 2. Illustrations of *P. bellii* (left) and *P. vitulifera* leaves showing leaf morphology characteristics. 1 = length; 2 = width; 3 = toptooth (here, present); 4, 5 = width of sinuses. The *P. vitulifera* leaf shown has one pair of sinuses (6), which were counted for the character *pairsinuses*. Leaves often had one or more teeth around the margin (*number-teeth*), which were left off this illustration for clarity.

#### Literature cited

Jennings, W. 2004. The status of *Physaria vitulifera* in Wyoming. *Castilleja: A Publication of the Wyoming Native Plant Society* 23: 3-4. [www.uwyo.edu/wyndd/wnps/wnps\\_home.htm](http://www.uwyo.edu/wyndd/wnps/wnps_home.htm)

Doyle, G. A., S. L. Neid, and R. J. Rondeau. 2004. Survey of Critical Biological Resources, Larimer County, Colorado. Unpublished report. Colorado Natural Heritage Program.

Spackman, S., B. Jennings, J. Coles, C. Dawson, M. Minton, A. Kratz, and C. Spurrier. 1997. Colorado Rare Plant Field Guide. Prepared for the Bureau of Land Management, USDA Forest Service, and U.S. Fish and Wildlife Service by the Colorado Natural Heritage Program.

#### Request for Proposals The John W. Marr and Myrna P. Steinkamp Funds

The Colorado Native Plant Society supports research projects in plant biology from the John W. Marr and Myrna P. Steinkamp funds. These two funds honor the late Dr. John Marr, Professor at the University of Colorado and the first President of CONPS, and Dr. Myrna Steinkamp, a founding member who supported CONPS for many years in a variety of capacities. Both funds were established to support research on the biology and natural history of Colorado native plants by means of small grants. The Steinkamp Fund targets rare species and those of conservation concern. Both field and laboratory studies are eligible for funding. Thanks to the generous contributions of many members and supporters, \$3,000 is available, although individual awards will not exceed \$1,000. Recipients of the awards must agree to summarize their studies for publication in *Aquilegia*, the Society's newsletter, and are encouraged to make chapter presentations.

The Board of Directors is now soliciting proposals for a February 15, 2007 (postmarked) deadline. Contact Board member Jan Loeche Turner at [jlturner@regis.edu](mailto:jlturner@regis.edu) or 303-458-4262, or visit the CONPS web site for guidelines and requirements, [http://www.conps.org/research\\_grants.html](http://www.conps.org/research_grants.html).

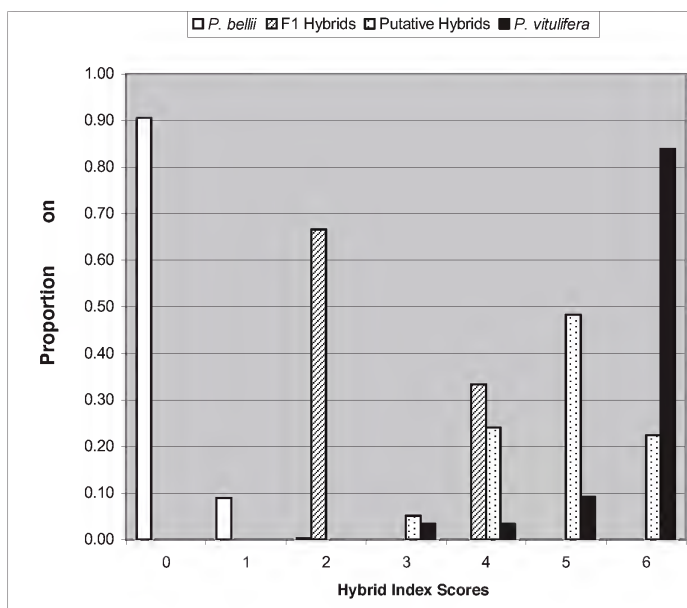


Figure 1. Histogram of hybrid index scores for *Physaria bellii* (N = 300), known F1 hybrids (N = 3), putative hybrids (N = 58) and *P. vitulifera* (N = 87), showing proportion of each group with a given index score. Scores toward zero are more *P. bellii*-like and scores toward six are more *P. vitulifera*-like.

## Society Announcements

### Book Sales Update

Our amazing *Amazon program* allows members and the general public to order botanical publications through Amazon.com by clicking on the links from our bookstore webpage, <http://www.conps.org/bookstore.html>. CONPS will receive approximately seven percent of the purchase price on books listed on our webpage. If you click on any link to Amazon.com from our webpage, and from that link order other merchandise from Amazon.com, CONPS receives about five percent of the purchase price no matter how unrelated to plants or botany your purchase is! You can order cameras, cleaning supplies, cookies, clothing, calculators crocodiles - whatever!

Since so many of our book and merchandise offerings are now available through Amazon.com, the Sales Committee is streamlining the items for sale at CONPS functions and by mail order. Therefore, several items on the back page of the Mail Order Form are available at reduced prices in the *Inventory Closeout* section. We will not order these items again so snap them up now! We will continue to carry the most popular items, primarily related to plants in the Rocky Mountain region. Please feel free to suggest new items pertinent to the CONPS mission. We stock many items at minimal levels and oftentimes our entire inventory of an item will sell out completely. Therefore, it is possible that the item, size or edition that you want is not available. Do not place a mail order until you *check with Mary Ellen Ford* (303-449-7334 or [Fordmaryel@aol.com](mailto:Fordmaryel@aol.com)).

### Book Review

*Rocky Mountain Flora* by James Ells  
Golden: Colorado Mountain Club Press, 2006.  
320 p. \$22.95

The Colorado Mountain Club recently published its first botanical field guide, *Rocky Mountain Flora*. The focus is common plants of trails of the Rocky Mountains in Colorado and Wyoming. Photographs and brief descriptions of over 700 wildflowers, trees and lichens comprise this book by CSU horticulturist James Ells. Plants are arranged by flower color. Within colors, arrangement is by common name of family, then by the scientific name of the species. Entries include small photos, description, ecology (life zone), location (a place you may find it), and diagnostic traits (for example, spoon-shaped pods for peppergrass). Trees and plants with inconspicuous flowers may be found under "flowers of different colors". There are separate sections for grasses, sedges and rushes, mushrooms, lichens and mosses. Lists of edible native plants and poisonous native plants are found in the back of the book as are a glossary, index and pages to write a "life list".

-- Jan Loechell Turner

### Boulder Chapter News

Tommi Wolfe has stepped down as Boulder Chapter President after several years of service. CONPS thanks Tommi and wishes her well in her new pursuits. Deby Stabler has been elected to succeed her. Deby has lived in Boulder for ten years and is pas-

sionate about the world of plants and fascinated by botany, ethnobotany and plant folklore. Contact her at 303-902-4679 or [debystabler@yahoo.com](mailto:debystabler@yahoo.com).

### Workshops continued from page 2

#### VEGETATION ZONES AND RARE PLANTS OF THE COLORADO FRONT RANGE

Leader: Steve Popovich

Location: Arapaho-Roosevelt National Forests

Supervisor's Office Headquarters,

2150 Centre Avenue, Building E, Fort Collins

First Session: Saturday, April 21, 2007

Second Session: Sunday, April 22, 2007

Time: 9 am to 2 pm

Back by popular demand, Steve Popovich, Botanist for the Arapaho-Roosevelt National Forests and Pawnee National Grassland, will lead this workshop. Participants will learn why and how plant life changes as we go from the prairie to the peaks. Through photos and discussion, Steve will introduce you to the basic plant communities found in the major life zones of the Front Range, from the shortgrass prairie to the montane forest, sub-alpine forest and alpine tundra. Learn about floristically important places like Mt. Evans. Steve will also discuss specialized plant communities that harbor some of Colorado's rarest plants and will review the "new species" discovered in the mountains west of Denver and Boulder! Class finishes with an optional short field trip on a bike path to see a rare plant in early rosette in Fort Collins open space.

#### TREES AND SHRUBS OF COLORADO

Leader: Jack L. Carter

Locations: Colorado Springs and Denver

First Session: Saturday, May 19, 2007

Colorado College, Colorado Springs

Second Session: Sunday, May 20, 2007

University of Colorado at Denver

Time: 9 am to 3 pm

Using the recently revised and expanded edition of Jack Carter's *Trees & Shrubs of Colorado*, participants will learn to identify many of the nearly 300 woody species in Colorado. From the book's wonderful illustrations, color photographs, clear keys and helpful descriptions, attendees will be provided an opportunity to put their identification skills to work with plant material on hand at the workshop. Jack explains his workshop philosophy: "I still believe in learning by doing. My approach for many years has been to make every participant a learner, by assisting them in taking those first few steps by first studying an illustrated glossary and then using a dichotomous key. With the appropriate tools they are free to learn again at a later date and through their own personal involvement. I always make clear to the students in my field botany courses that if I do a good job, then they will no longer need me to identify the local flora. The only requirements are a desire to learn, a hand lens, and a key to the regional flora. I like to call it the Linnaeus method."

## CHAPTER NEWS

### Boulder Chapter

Monthly meetings are the second Thursday of the month at 7 PM at the City of Boulder Open Space and Mountain Parks offices in the north building conference room, 66 South Cherryvale Road. From South Boulder Road, go south on Cherryvale 1/10 mile and turn west onto a lane to the offices. For schedule information, contact Chapter President Deby Stabler, debystabler@yahoo.com or 303-902-4679.

**October 12 Gardening with Native Plants and Creating a Native Xeriscape.** Dave Sutherland.

**November 9 Topic TBA.**

**December 7 Efforts to Preserve Colorado Rare Plants.** Brian Kurzel.

**January 11 Topic TBA.**

**February 8 Boulder's Tallgrass Prairies.** Steve Jones and Lynn Riedel.

**March 8 Topic TBA.** Dr. David Buckner.

### Fort Collins Chapter

Monthly meetings are held on the first Wednesday of the month at 7 PM at the Gardens on Spring Creek, 2145 Centre Ave., Fort Collins. Dinner with the speaker will be at 5:30 pm at Avogadro's Number on Mason Street. Please contact Denise Culver the day before if you will join us for dinner, dculver@lamar.colostate.edu or 970-686-7428.

**October 4 Botanical Field Surveys in the 21st Century.** Rick Shory, National Renewable Energy Laboratory (NREL).

**November 1 Topic TBA.**

**December 6 Topic TBA.**

### Metro-Denver Chapter

Monthly meetings are held September through April at 7 PM in the Waring House Main Room (unless otherwise noted) at the Denver Botanic Garden (the mansion just

south of the main entrance on York Street). To enter, head south on York past the Gardens main entrance. Make an immediate right into parking lot that says "Staff Parking." Members are invited to join speakers at 5:30 PM for pizza at Angelo's, 620 East 6th Ave (between Pearl and Washington) in Denver. For more information, contact Chapter President Naomi Nigro, 303-366-6033, or email naomi4CoNPS@hotmail.com.

### Plateau Chapter

Contact Chapter President Jeanne Wenger at 970- 256-9227, stweandjaw@acsol.net or Gay Austin, 970-641-6264, austinaceae@frontier.net for meeting information.



Clay loving wild buckwheat, *Eriogonum pelinophilum*. Photo courtesy of James L. Reveal @ USDA-NRCS PLANTS Database.

**November 18 Potluck & Meeting, Saturday, 10:00 - 1:30.** Come to the Plateau Chapter Fall Potluck & Meeting and meet a rare Colorado native plant! The clay-loving buckwheat lives **only** in western Colorado. Bring a dish to share and the chapter will provide something to drink. There will be drawings for matted color photos of this rare plant as well as other stunning photographs of native plants. A \$2 admission will get you one chance to win and you may purchase more tickets. The location for this meeting will be in the next issue of *Aquilegia* or posted on the CONPS web site, [www.conps.org](http://www.conps.org).

### Southeast Chapter

Activities are scheduled throughout the year. For chapter information or to volunteer, contact Liz Klein, [eklein@kiowaengineeringcs.com](mailto:eklein@kiowaengineeringcs.com), 719-633-5927, Elsie Pope, 719-596-4901, or email Doris Drisgill, [ddrisgill@cs.com](mailto:ddrisgill@cs.com).

### Southwest Chapter

For news and activities, contact Chapter President Al Schneider, 970-882-4647, [webmaster@conps.org](mailto:webmaster@conps.org).

### *Aquilegia* via Email

*Aquilegia* is available via email as an Adobe document. File size is typically 2-3 MB and fast internet connections are needed to download or view it. Send your email address to Eric Lane, [eric.lane@ag.state.co.us](mailto:eric.lane@ag.state.co.us).



Bell's twinpod, *Physaria bellii*. Photo courtesy of M.P. Steinkamp @ USDA-NRCS PLANTS Database.



## Colorado Native Plant Society

The Colorado Native Plant Society is a non-profit organization dedicated to the appreciation and conservation of the Colorado native flora. Membership is open to all with an interest in our native plants, and is composed of plant enthusiasts both professional and non-professional.

Please join us in helping to encourage interest in enjoying and protecting Colorado's native plants. The Society sponsors field trips, workshops, and other activities through local chapters and statewide. Contact the Society, a chapter representative, or committee chair for more information.

### Schedule of Membership Fees

Life .....	\$250
Supporting .....	\$50
Organization or Corporate .....	\$30
Family or Dual .....	\$20
Individual .....	\$15
Student or Senior .....	\$8

### Membership Renewal/Information

Please direct all membership applications, renewals and address changes to Eric Lane, Chair of Membership, Colorado Native Plant Society, P.O. Box 200, Fort Collins, CO 80522. Please direct all other inquiries regarding the Society to the Secretary at the same address.

# Aquilegia

*Aquilegia* is published four or more times per year by the Colorado Native Plant Society. This newsletter is available to members of the Society and to others with an interest in native plants. Articles for *Aquilegia* may be used by other native plant societies or non-profit groups, if fully cited to author and attributed to *Aquilegia*.

Articles from 500 to 1500 words in length, such as unusual information about a plant, are welcome. Previously published articles submitted for reprinting require permission. Digital photographs or line drawings are also solicited. Please include author's name and address, although anonymity may be requested. Articles must be submitted electronically.

Please direct all contributions to the newsletter to:

**Alice Guthrie**

**509 Collyer**

**Longmont, CO 80501**

**E-Mail: molly82@earthlink.net**  
**guthriea@bouldercolorado.gov**

### Officers

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Secretary .....	Kim Regier. .... 303-556-8309
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### Chapter Presidents

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Southwest .....	Liz Klein .....	719-633-5927
Southwest .....	Al Schneider ....	970-882-4647

### Standing Committees and Chairs

Conservation ...	Sarada Krishnan ..	303-465-4274
Education and Outreach	Megan Bowes ...	303-561-4883
Endowment ...	Vacant .....	
Field Studies ...	John Proctor .....	970-723-8204
Field Trips .....	Steve Yarbrough ..	303-233-6345
Finance. ....	Naomi Nigro ....	303-366-6033
Horticulture and. .	Laurel Potts & ...	970-328-8633
Restoration. ....	Lisa Tasker .....	970-948-4857
Media .....	Boyce Drummond .....	970-690-7455
Membership. ....	Eric Lane .....	303-239-4182
Rare Plant .....	Eleanor Von Barga	
Monograph .....		303-756-1400
Research Grants. .	Jan Loechell ....	303-458-4262
Sales. ....	Denise Wilson ...	303-642-0510
Workshop .....	Mary Ellen Ford. .	303-449-7334

## MEMBERSHIP APPLICATION AND RENEWAL FORM

Name(s) \_\_\_\_\_  
 Address \_\_\_\_\_  
 (Address) \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone \_\_\_\_\_ E-mail \_\_\_\_\_

### MEMBERSHIP CLASS:

Dues cover a 12-month period.

- ☐ Individual, \$15.00  
☐ Family/dual, \$20.00  
☐ Senior, \$8.00  
☐ Student, \$8.00  
☐ Corporate, \$30.00  
☐ Supporting, \$50.00  
☐ Lifetime, \$250.00

Chapter (Circle one): Boulder Fort Collins Metro Denver Plateau Southeast Southwest

In addition to my membership, I have included \$\_\_\_\_\_ as a contribution to the John Marr Fund (endowment in support of small grants-in-aid of research), \$\_\_\_\_\_ as a contribution to the Myrna P. Steinkamp Memorial Fund (endowment in support of small grants-in-aid of research), or \$\_\_\_\_\_ as a general contribution to the Society.

**CONPS IS A NON-PROFIT ORGANIZATION — DUES AND CONTRIBUTIONS ARE TAX-DEDUCTIBLE**



# CALENDAR 2006 - 2007

## SOCIETY FIELD TRIPS

January 13, 2007

Winter Botany at White Ranch

Leo Bruederle, 303-556-3419

leo.bruederle@cudenver.edu.

## BOARD OF DIRECTORS MEETINGS

September 9

November 11

February 10

April 14

## SOCIETY WORKSHOPS

Fall 2006

September 23

Colorado Wildscapes: Bringing  
Conservation Home

October 21 & 22

Beginning Plant Taxonomy: The  
Big Picture

November 18 & 19

*Populus L.* (Salicaceae)

December 9

Gymnosperms

Spring 2007

January 13 & 14

Introduction to Grass Tribes

February 10 & 11

*Potentillas* of Colorado

March 17 & 18

Euphorbiaceae in Colorado

April 21 & 22

Vegetation Zones and Rare  
Plants of the Front Range

May 19 & 20

Trees and Shrubs of Colorado

TIME SENSITIVE MATERIAL

